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WORKER SAFETY AND HEALTH TRAINING

A White Paper for a Collaborative Approach to Integrated Safety & Health Training at DOE Facilities

This white paper proposes a "straw man" program to expand the use of collaborative safety and health training across the Department of Energy (DOE) facilities. The intent of this proposal is to initiate a dialogue across the DOE complex to foster discussion and ideas for implementation of integrated safety and health training that could minimize redundancy and enhance the quality, efficiency, and effectiveness of DOE worker training. The intent of this white paper is for the internal use of the NTC for explanation and description of what is meant by the "Passport Project."

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Background: The U.S. Department of Energy's (DOE) Office of Health, Safety and Security (HSS) National Training Center (NTC) and the U.S. Department of Health and Human Services, National Institute of Environmental Health Sciences (NIEHS) teamed to establish a model for collaborative safety training workshops across DOE operating sites. The objective of these collaborative workshops was to identify areas and topics where HSS-NTC, the NIEHS, and grantees under the NIEHS Worker Education & Training Program's DOE Nuclear Weapons Cleanup Training Program[1] could work collaboratively with the DOE site programs to improve the existing safety of site operations and gain complex wide efficiencies through training. To achieve this, a series of safety training collaborative workshops were held between July 2009 and October 2010 at four DOE sites to identify areas of training efficiencies that could be addressed by management in partnership with their contractors and unions. Representatives from Federal, contractor, and organized labor along with HSS-NTC, NIEHS and staff from the Volpentest HAMMER Training and Education Center (HAMMER) were involved in the individual workshop advance planning as well as the workshop itself. The focus of the effort was primarily, but not limited to, health and safety training that meets the requirements of Title 10 CFR Part 851, Worker Safety and Health Program Rule.

The workshops were conducted over a day and a half and included presentations by all parties involved. Facilitated breakout sessions provided the opportunity for participants to have detailed dialogues relative to training experiences at the site, what was working well, issues that have arisen and what barriers existed, and how improvements could be achieved. The workshops were held at Oak Ridge, Savannah River, Los Alamos, and Idaho. The following items were used to generate group dialogue in the breakout sessions:

- Current safety training programs
- Specific training (including specialty training) currently offered or planned
- Identified safety training needs
- Current collaborations at the site between the site, contractors, and unions as well as any site initiatives for increasing training efficiencies (i.e., integrating courses, reducing costs, and increasing effectiveness)
- Concerns, impediments, and/or barriers to providing effective safety training
- Reasons and/or factors that contribute to effective safety training
- Frequency and instances of duplicative or redundant training courses
- Content consistency between the same or similar training
- Lessons learned and any notable trends in safety training

[1] NIEHS WETP's DOE Nuclear Weapons Cleanup Training Program is focused on training workers engaged in environmental restoration, waste treatment and emergency response activities at sites in the DOE nuclear weapons complex. From the inception of the program in 1995 through 2009, NIEHS grantees have provided over 25,500 courses to more than 355,000 DOE contractor workers for nearly 5 million contact hours of safety and health training.

These workshops pointed to a critical need for improved training quality, training standardization, and improved portability of training across the various DOE sites and contractors within a site as well as across the DOE complex where possible. Overarching themes that emerged from the workshops were that the Sites should improve communications through:

- Establishing Site Safety Training Working Groups to address safety training issues;
- Developing and implementing mechanisms to improve/enhance communications across the different site organizations and contractors; and
- Establishing and maintaining Point of Contact (POC) lists to communicate site safety training issues, lessons learned, and corrective actions.
- Training quality, transportability, and standardization are the key issues that need to be addressed and enhanced.
- HSS approved standardized criteria should be developed and utilized to evaluate safety training courses from different providers.

Workers involved in the full range of site activities receive appropriate hazard-based training from their companies, union hall or DOE site contractors. However, they often must take the same or similar training every time they are assigned to different DOE projects, or different DOE sites, facilities or contractors. By extension, DOE workers that find work at a different DOE site must also be re-trained on the same safety and health issues not just those applicable to specific site. By reducing these redundancies, the government could potentially achieve significant cost reductions, increase overall productivity by having workers prepared to assume duties upon hiring and improve safety by adopting a more standardized approach. In order to evaluate these potential enhancements as well as to prepare for the workshops and share lessons learned, the HSS-NTC and NIEHS partnership benchmarked HAMMER.

The HAMMER Approach to Integrated Collaborative Safety Training: The DOE has implemented an acquisition approach for the Hanford Site Central Plateau and River Corridor that integrates the needs of DOE's Richland Offices (RL and ORP) into four cleanup contracts: CH2M Hill, Washington River Protection Solutions, Washington Closure Hanford and Mission Support Alliance (MSA). The mission support contract, managed by MSA, has responsibility for the development, coordination, and execution of the Hanford Site-Wide Standards Management Plan, including the operation of HAMMER.

The workforces managed by the four prime contractors perform similar tasks with similar risks, and hence require the same basic safety training. The mission support contractor, MSA, established the Hanford Site-wide Safety Program organization to develop, manage and administer common safety processes and standardize training associated with implementing these site-wide programs. As defined by the Hanford Site-Wide Standards Management Plan, processes, procedures and working agreements have been established, DOE and prime contractor senior management buy-in has been obtained and union leadership involvement has been secured. The results of this effort include higher quality and more consistent safety training; worker buy-in to the Hanford safety culture; increased construction worker mobility to accommodate the ebb and flow of construction and remediation projects; cost savings in terms of reduced redundant training times and development of training materials; and faster

project startups as a result of increased workforce availability. The five major elements to this model are as follows:

- "Workers Training Workers" – Worker Trainers are not full-time instructors. They spend time developing and delivering training then return to work maintaining field skills, experience, and a connection with their peers.
- Transportability of Training – Provides training requirements for equivalency and reciprocity of training.
- Centralized Training Records – Provides the infrastructure and support for site contractors and managers to verify qualifications and training of a mobile workforce.
- Common Safety Processes – Establishes a set of site-wide procedures, programs, and standardized training that provides a consistent approach for workers to perform work safely, across the Hanford Site.
- Emphasis on "Hands-On" Training – Effective training recognizes how workers learn and qualifies that student to perform.

Results of this effort are tangible. To date, HAMMER has developed standardized training for the Hanford site in nine critical areas, including lockout/tag-out; hoisting and rigging; hazardous waste operations and emergency response standards (HAZWOPER); criticality safety; Radiological Worker and Radiological Control Technician training; confined space entry; respiratory protection; fall protection; and electrical safety. Standardized training is under development for five more areas: beryllium; excavation permits; hazardous chemicals; general employee training; and employee job task analysis. This integration has been achieved using a defined set of processes and principles that have been accepted by DOE, the site contractors and the site's labor unions. Cost savings over the last two years through elimination of redundant construction worker safety training is greater than $2M. Construction worker safety statistics have improved significantly and radiological program performance has improved. The Hanford program is a proven success and may have applicability in some fashion across the DOE complex, as evidenced from the on-going collaborative workshops.

Current Challenges in DOE Worker Safety Training: As evidenced by the collaborative workshops, DOE now faces the following set of challenges associated with complex-wide worker safety training.

- Portability of worker safety training, with the goal to better enable the highly qualified DOE workforce to move between on-site projects or to move to projects at different sites;
- Lack of a central training records capability to provide the ability to verify completed training;
- Cost and time savings through the reduction of redundant or equivalent training and training development; and
- ARRA workforce transition support by the development of cross-complex training in the most appropriate subjects to assure worker mobility.

Inefficiencies exist in worker safety training partially because the Department has moved to contracting models with multiple prime contractors at one site for improved mission accountability. Workers involved in the full range of site activities receive appropriate hazard-based training from their company, union hall or the DOE site contractor. Some hazards and the required safety training are not specific to

a project or a site. For example, currently, workers involved in activities ranging from building construction, special nuclear material processing operations, demolition of contaminated facilities, environmental cleanup, and support for scientific research, receive training from their company, union or the DOE site contractor. Although the safety training that workers receive is applicable to the hazards identified in performing the work, the requisite training, such as teaching ladder safety to a carpenter, is often not a unique hazard to the planned activity or to the project/facility. However, workers often must take the same or similar training when they are assigned to a different project or to a different contractor. In addition, workers that transfer to projects at different DOE sites must re-train on the same safety measures, impairing the mobility of the experienced DOE workforce. The net effect is that we are consuming workers' time and incurring additional costs performing unnecessary training and DOE sites are hiring new, untrained workers and losing the trained workforce due to lack of mobility.

The requirement to train hundreds of workers hired by DOE program and field elements with ARRA (stimulus) funding has highlighted the safety and cost reduction benefits to be gained from a high quality, consistent worker safety training program. In order to staff the projects in support of ARRA, the sites had to make improvements in the worker training turn-around-times without compromising the quality and applicability of the instruction. The existence of a consistent worker safety training program across the complex would have taken this burden off of the individual sites. Project managers and human resource professionals could have tapped the entire DOE workforce instead of being constrained by the local available workforce with no DOE experience. The ARRA workforce transition could be more effective if consistent standards for worker safety training were in place. Workers completing ARRA funded work could more easily be hired to work other ongoing DOE projects.

A Straw Man Approach to Improve DOE Safety and Health Training: The implementation of integrated collaborative safety and health training at sites across the DOE complex has the potential for producing significant efficiencies as well provide enhanced effectiveness of DOE worker safety and health training. While there are numerous potential frameworks for such efforts, a "straw man" program is proposed here to generate discussion and dialogue to facilitate the development and refinement of a program that could be applicable to numerous sites across the DOE complex and assist sites in implementing programs tailored to their specific needs and requirements. In order to be applicable to numerous sites, the proposed program should be sufficiently flexibility to address specific site situations and activities. Therefore, the proposed straw man is a process framework for implementing collaborative integrated safety and health training at specific sites so that each particular site may reap the benefits of training enhancements and efficiencies that best meet individual site requirements. The proposal is to establish the necessary framework and organization structure at participating sites through a process that would be facilitated by the partnership of HSS-NTC and NIEHS with the assistance of HAMMER staff providing their experiences and lessons learned in tailoring program at other sites.

It is essential that ownership of program implementation belongs to the specific sites, contractors, and labor representatives. The DOE, contractor and workforce leadership at the site must drive the scope and schedule of the integration effort based on site workforce needs and resources. The partnership (HSS-NTC, NIEHS, and HAMMER) will develop and administer the Program to assist the site and facilitate implementation. The responsibilities of the partners and participants are as follows:

- **DOE-HSS-NTC** will coordinate the program and serve as the liaison among the participants through the HSS-NTC, to include taking the lead on the development of the memoranda of agreements necessary to formalize the program at a specific site. HSS program offices will provide leadership

and support to develop and approve training criteria. HSS-NTC will also support establishment of training transportability including development of a training course certification or accreditation program focused on those criteria common across the complex. HSS-NTC will develop and implement a program to identify training completed by individual workers such as a "training passport" and the requisite record keeping protocols or systems. Systems will also be developed and maintained to track and record lists of courses and providers that are deemed to be acceptable. HSS-NTC will also serve as the focal point for obtaining interpretations of DOE regulations, policies and orders necessary for site implementation of the program. HSS-NTC will provide systems for tracking the progress of implementation of these collaborative programs at DOE sites and will provide systems and metrics for measurement of accomplishments and resulting benefits.

- **NIEHS and the NIEHS National Clearinghouse for Worker Safety and Health Training** will participate in the development and implementation of the straw man program and coordinate the activities of its awardee community including union-based and community college training organizations. This may include as needed, participation in collaborative meetings at additional DOE sites; presentations on core values of the NIEHS program including the central role of worker trainers in building a culture of safety at a site; the value of meaningful worker participation in achieving the goals of this effort; and the usefulness of the NIEHS Minimum Criteria for Worker Training in developing and evaluating training programs. NIEHS will also work collaboratively with the NTC and appropriate site participants in evaluating worker safety training programs in accordance with criteria which defines inclusion as reciprocity training. NIEHS will modify or update its on-line curricula catalog to accommodate any new site-wide or complex-wide approved curricula that are developed as a result of this effort. NIEHS will also periodically coordinate a national training workshop for DOE trainers and worker-trainers, and DOE, contractor, and NIEHS awardee staff involved in developing and delivering training at DOE sites. This workshop, referred to as a Trainers' Exchange, will focus on trainer development and will solicit session proposals from the target audience on a range of topics including curricula technical updates, new training methodologies and insights into training best practices. The overriding goal of the Trainers' Exchange is the sharing of information among trainers, training organizations and DOE sites while building a complex wide safety culture.

- **HAMMER** will provide subject matter experts who are operations managers, program managers and skilled trainers with the experience to overcome existing barriers to an integrated approach. In addition, HAMMER will assist in the development of the certification processes. The integration achieved at Hanford was based on the development of a defined set of processes and principles that have been accepted by the DOE-RL leadership, the site contractors and the site's labor unions. The straw man program will adopt this set of principles and processes while allowing for adaptation to a site's organizational structures and needs. HAMMER training professionals and labor liaisons responsible for implementing the Hanford program will be assigned to this effort as technical subject matter experts and project managers as requested by specific sites for assistance.

- **Field sites** have the responsibility for program implementation. All efforts undertaken by the straw man program will be geared to making the sites successful in their integration efforts. The sites will develop the program plans, establish the organization structures and define the training integration priorities. An important element of this proposal is the implementation of "workers training workers" or peer training across the sites. The site management team is responsible for this activity.

The program will be managed by a DOE senior program manager at the HSS-NTC. Reporting on a matrix basis to the program manager are project managers from the team members and the sites. Program implementation will be overseen by a senior advisory committee. The membership of this committee will include representatives from HSS and the program offices responsible for the sites (NNSA, EM, SC, NE and DOE-RL HAMMER Program Manager); NIEHS management; and national labor unions' management. In addition to program oversight, this committee will be responsible for issues resolution at the national level. Additionally, involvement and support of the Energy Facility Contractors Group (EFCOG) will occur through the respective HSS organization sponsor.

Following the Hanford Site-wide Safety Program model, program plans will be developed and approved at the complex-wide level and at the site level. These program plans will lay out the roles and responsibilities for all of the required participants, including Federal management, contractor management and labor management. MOU's will be developed in the initial stages of program development. As a minimum, MOUs will be established between this program and the DOE program offices, affected national labor unions and affected DOE site offices.

The DOE site offices are responsible to their respective program offices for implementation of this program. Contractual requirements for participation will need to be negotiated with the site's prime contractors. A lead contractor organization at each site should be given responsibility and authority for program definition, coordination and implementation and will be provided assistance by the HSS-NTC and NIEHS Partnership and the HAMMER staff as appropriate. It is anticipated that each site will employ a "board of directors" model (mentored and coached by HAMMER and DOE-RL staff) responsible for overseeing program implementation.

The long term scope of this effort is to implement the proposed Program at all major sites in the complex, including NNSA sites. The implementation will be phased beginning with the implementation of a pilot program of the "straw man" at a selected site to identify issues and concerns to refine the program before DOE-wide implementation. Following initiation of the effort at the pilot site, proposed implementation will begin at the remaining sites participating in the workshops. Phase 1 of this effort, to be completed within 18 months, will include the following activities:

- Establishing MOUs with program offices, site offices, prime contractors and labor unions to adopt the integrated training approach and acceptance of the certification program and the transportability of the certified training. MOUs will be developed in support of the effort at ORR, INL, SRS and LANL.
- Developing programmatic documents including the proposed DOE Complex-wide Program Plan and the ORR/INL/SRS/LANL site-specific program plans. Developed plans will align with Hanford Site programmatic documents.
- Completing the program planning for later phases of the effort.

Conclusion: Although workers at DOE sites receive appropriate hazard-based training from their companies, union hall or DOE site contractors, significant gains in safety, efficiency, and effectiveness can be achieved through improved worker safety and health training. The collaborative approach to worker safety and health training proposed here has the potential to achieve the significant improvements identified through recent training workshops. Implementation of a program as proposed that evolves as it is implemented across the DOE sites will greatly enhance the quality and effectiveness of worker safety and health training while having the potential to accrual significant savings and avoided costs by minimizing the level of training redundancy and inefficiencies.